19-3043; Rev 2; 2/05

MAXIM

四路、DPDT音频/数据开关，UCSP/QFN封装

概述

MAX4758/MAX4759为四路、双刀/双掷(DPDT)模拟开关，采用+1.8V至+5.5V单电源供电。这些开关具有0.5Ω低导通电阻以及25pF低电容，这使其非常适合音频和数据信号切换。

MAX4758有八个导通电阻为0.5Ω的开关，用于切换音频信号。MAX4759有四个导通电阻为0.5Ω的开关，用于切换音频信号，以及四个具有25pF电容的开关，用于切换数据信号。MAX4758/MAX4759有四个逻辑输入端，分别用来控制成对的开关。

MAX4758/MAX4759提供小尺寸、36引脚(6mm x 6mm)薄型QFN封装和36焊球(3mm x 3mm)晶片级封装(UCSP™)。

应用

扬声器-耳机开关
音频信号切换
蜂窝电话
PDA/手持式设备
笔记本电脑
USB信号开关

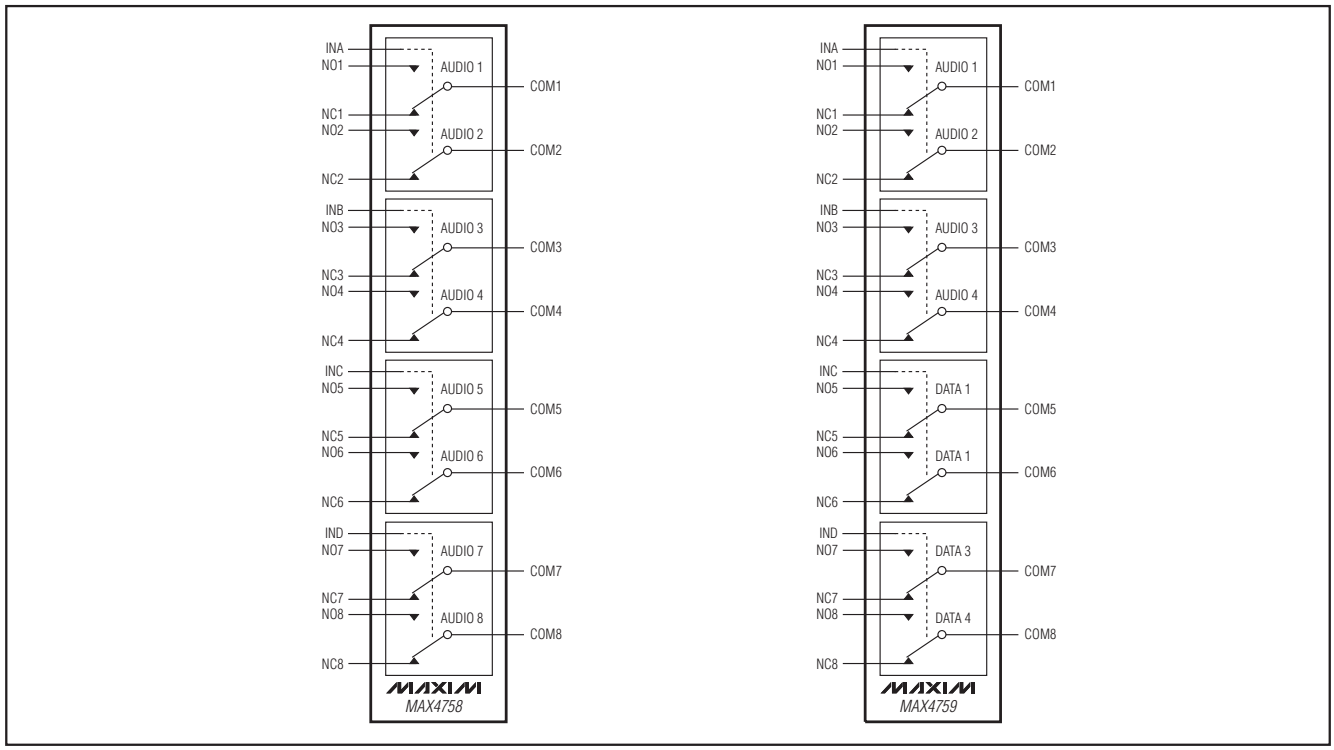
特性

- ♦ 数据与音频信号切换
- ♦ 低导通电阻(0.5Ω)音频开关
- ♦ 0.2Ω导通电阻平坦度
- ♦ 0.1Ω通道间匹配度
- ♦ 低电容(25pF)数据开关(MAX4759)
- ♦ 0.2ns偏斜(MAX4759)
- ♦ 0.03% THD
- ♦ +1.8V至+5.5V电源范围
- ♦ 可处理满摆幅信号
- ♦ 微型36焊球UCSP (3mm x 3mm)封装
- ♦ 36引脚薄型QFN (6mm x 6mm)封装

定购信息

PART	TEMP RANGE	PIN-PACKAGE
MAX4758EBX-T	-40°C to +85°C	36 UCSP-36
MAX4758ETX	-40°C to +85°C	36 Thin QFN (6mm x 6mm)
MAX4759EBX-T	-40°C to +85°C	36 UCSP-36
MAX4759ETX	-40°C to +85°C	36 Thin QFN (6mm x 6mm)

功能框图



UCSP是Maxim Integrated Products, Inc.的商标。

引脚配置/真值表在数据资料的最后给出。

ABSOLUTE MAXIMUM RATINGS

(All voltages referenced to GND.)
V+, IN_.....-0.3V to +6V
COM_, NO_, NC_ (Note 1) .....-0.3V to (V+ + 0.3V)
Continuous Current
NO_, NC_, COM_ (MAX4758) .....±300mA
NO1–NO4, NC1–NC4, COM1–COM4 (MAX4759) .....±300mA
NO5–NO8, NC5–NC8 COM5–COM8 (MAX4759) .....±100mA
Peak Current NO_, NC_, COM_ (MAX4758)
NO1–NO4, NC1–NC4, COM1–COM4 (MAX4759)
(pulsed at 1ms, 10% duty cycle).....±500mA
(pulsed at 1ms, 50% duty cycle).....±400mA
Peak Current NO5–NO8, NC5–NC8, COM5–COM8 (MAX4759)
(pulsed at 1ms, 10% duty cycle).....±200mA
(pulsed at 1ms, 50% duty cycle)..... ±300mA

Continuous Power Dissipation (T_A = +70°C)
36-Bump UCSP (derate 15.3mW/°C above +70°C).... 1221mW
36-Pin Thin QFN (derate 26.3mW/°C above +70°C)... 2105mW
ESD per Method 3015.7.....±2kV
Operating Temperature Range .....-40°C to +85°C
Junction Temperature.....+150°C
Storage Temperature Range .....-65°C to +150°C
Lead Temperature (soldering, 10s) ..... +300°C
Bump Temperature (soldering)
Infrared (15s) .....+220°C
Vapor Phase (60s) .....+215°C

Note 1: Signals on NO_, NC_, COM_ exceeding V+ or GND are clamped by internal diodes. Limit forward-diode current to maximum current rating.

Stresses beyond those listed under "Absolute Maximum Ratings" may cause permanent damage to the device. These are stress ratings only, and functional operation of the device at these or any other conditions beyond those indicated in the operational sections of the specifications is not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

ELECTRICAL CHARACTERISTICS

(V+ = +2.7V to +5.25V, T_A = -40°C to +85°C, unless otherwise noted. Typical values are at V+ = 3V, T_A = +25°C.) (Notes 2, 3)

PARAMETER	SYMBOL	CONDITIONS		T_A	MIN	TYP	MAX	UNITS
ANALOG SWITCH								
Analog Signal Range	$V_{COM\_}$, $V_{NO\_\_}$, $V_{NC\_\_\_}$			T_{MIN} to T_{MAX}	0		V+	V
On-Resistance (Note 4)	R_{ON}	V+ = 2.7V, $I_{COM\_}$ = 10mA, $V_{NC\_}$ or $V_{NO\_}$ = 0 or V+	MAX4758, MAX4759 (N_ 1–N_4)	+25°C		0.5	0.85	Ω
				T_{MIN} to T_{MAX}			1.0	
			MAX4759 (N_5–N_8)	+25°C		2.0	3.5	
				T_{MIN} to T_{MAX}			4	
On-Resistance Match Between Channels (Notes 4, 5)	ΔR_{ON}	V+ = 2.7V, $I_{COM\_}$ = 10mA, $V_{NO\_}$ or $V_{NC\_}$ =1.5V	MAX4758, MAX4759 (N_1–N_4)	+25°C		0.1	0.35	Ω
				T_{MIN} to T_{MAX}			0.55	
			MAX4759 (N_5–N_8)	+25°C		0.2	0.4	
				T_{MIN} to T_{MAX}			0.55	
On-Resistance Flatness (Note 6)	$R_{FLAT (ON)}$	V+ = 2.7V, $I_{COM\_}$ = 10mA, $V_{NC\_}$ or $V_{NO\_}$ = 0 or V+	MAX4758, MAX4759 (N_1–N_4)	+25°C		0.2	0.45	Ω
				T_{MIN} to T_{MAX}			0.55	
			MAX4759 (N_5–N_8)	+25°C		0.8	1.5	
				T_{MIN} to T_{MAX}			1.8	
NO_, NC_ Off-Leakage Current	$I_{NO\_(OFF)}$, $I_{NC\_(OFF)}$	V+ = 3.6V; $V_{COM\_}$ = 3.3V, 0.3V; $V_{NO\_}$ or $V_{NC\_}$ = 0.3V, 3.3V		+25°C	-5		+5	nA
				T_{MIN} to T_{MAX}	-25		+25	
COM_ On-Leakage Current	$I_{COM\_(ON)}$	V+ = 3.6V; $V_{COM\_}$ = 3.3V, 0.3V; $V_{NO\_}$ or $V_{NC\_}$ = 3.3V, 0.3V, or floating		+25°C	-5		+5	nA
				T_{MIN} to T_{MAX}	-25		+25	
DYNAMIC								
Turn-On Time	t_{ON}	V+ = 2.7V, $V_{NO\_}$ or $V_{NC\_}$ = 1.5V; R_L = 50Ω; C_L = 35pF, Figure 2		+25°C		45	140	ns
				T_{MIN} to T_{MAX}			150	

ELECTRICAL CHARACTERISTICS (continued)

(V+ = +2.7V to +5.25V, T_A = -40°C to +85°C, unless otherwise noted. Typical values are at V+ = 3V, T_A = +25°C.) (Notes 2, 3)

PARAMETER	SYMBOL	CONDITIONS		T_A	MIN	TYP	MAX	UNITS
Turn-Off Time	t_{OFF}	V+ = 2.7V, $V_{NO\_}$ or $V_{NC\_}$ = 1.5V; R_L = 50Ω; C_L = 35pF, Figure 2		+25°C		25	50	ns
				T_{MIN} to T_{MAX}			60	
Break-Before-Make (Note 7)	t_{BBM}	V+ = 2.7V, $V_{NO\_}$ or $V_{NC\_}$ = 1.5V; R_L = 50Ω, C_L = 35pF, Figure 3		+25°C		15		ns
				T_{MIN} to T_{MAX}	2			
Skew (Note 7)	t_{SKEW}	R_S = 39Ω, C_L = 50pF, MAX4759 (COM5–COM8), Figure 4		+25°C		0.2	0.5	ns
Charge Injection	Q	V_{GEN} = 0, R_{GEN} = 0, C_L = 1.0nF, Figure 5	MAX4758, MAX4759 (COM1–COM4)	+25°C		40		pC
			MAX4759 (COM5–COM8)			15		
On-Channel -3dB Bandwidth	BW	Signal = 0dBm, C_L = 5pF, R_L = 50Ω, MAX4758, MAX4759 (COM1–COM4)		+25°C		50		MHz
		Signal = 0dBm, C_L = 5pF, R_L = 50Ω, MAX4759 (COM5–COM8)		+25°C		320		
Off-Isolation (Note 8)	V_{ISO}	C_L = 5pF, R_L = 50Ω, $V_{COM\_}$ = $1V_{P-P}$, f = 100kHz, Figure 6		+25°C		-95		dB
Crosstalk (Note 9)	V_{CT}	C_L = 5pF, R_L = 50Ω, $V_{COM\_}$ = $1V_{P-P}$, f = 100kHz, Figure 6		+25°C		-100		dB
Total Harmonic Distortion	THD	f = 20Hz to 20kHz, $1V_{P-P}$	MAX4758, MAX4759 (N_1–N_4), R_L = 32Ω	+25°C		0.03		%
			MAX4759 (N_5–N_8), R_L = 600Ω	+25°C		0.03		
NO_, NC_ Off-Capacitance	$C_{NO\_(OFF)}$, $C_{NC\_(OFF)}$	$V_{NO\_}$, $V_{NC\_}$ = GND, f = 1MHz, Figure 7	MAX4758, MAX4759 (N_1–N_4)	+25°C		102		pF
			MAX4759 (N_5–N_8)	+25°C		25		
COM_ On-Capacitance	$C_{(ON)}$	$V_{NO\_}$, $V_{NC\_}$ = GND, f = 1MHz, Figure 7	MAX4758, MAX4759 (COM1–COM4)	+25°C		284		pF
			MAX4759 (COM5–COM8)	+25°C		54		
DIGITAL I/O (IN_,)								
Input Logic-High	V_{IH}	V+ = 2.7V to 3.6V		T_{MIN} to T_{MAX}	1.4			V
		V+ = 3.6V to 5.25V		T_{MIN} to T_{MAX}	2.0			
Input Logic-Low	V_{IL}	V+ = 2.7V to 3.6V		T_{MIN} to T_{MAX}			0.5	V
		V+ = 3.6V to 5.25V		T_{MIN} to T_{MAX}			0.6	
Input Leakage Current	I_{IN}	V_{IN} = 0 or V+		T_{MIN} to T_{MAX}			1	µA

ELECTRICAL CHARACTERISTICS (continued)

(V+ = +2.7V to +5.25V, T_A = -40°C to +85°C, unless otherwise noted. Typical values are at V+ = 3V, T_A = +25°C.) (Notes 2, 3)

PARAMETER	SYMBOL	CONDITIONS	T_A	MIN	TYP	MAX	UNITS
POWER SUPPLY							
Power-Supply Range	V+		T_{MIN} to T_{MAX}	1.8		5.5	V
Positive Supply Current	I+	V+ = 4.3V, $V_{IN\_}$ = 0V or V+	+25°C		0.01		µA
			T_{MIN} to T_{MAX}			1.0	

Note 2: The algebraic convention is used in this data sheet; the most negative value is shown in the minimum column.

Note 3: UCSP packages are 100% tested at +25°C and limits across the full temperature range are guaranteed by correlation and design. Thin QFN parts are 100% tested at +85°C and limits across the full temperature range are guaranteed by correlation and design.

Note 4: R_{ON} and ΔR_{ON} matching specifications are guaranteed by design.

Note 5: $\Delta R_{ON} = R_{ON(MAX)} - R_{ON(MIN)}$.

Note 6: Flatness is defined as the difference between the maximum and minimum value of on-resistance as measured over the specified analog signal ranges.

Note 7: Guaranteed by design, not production tested.

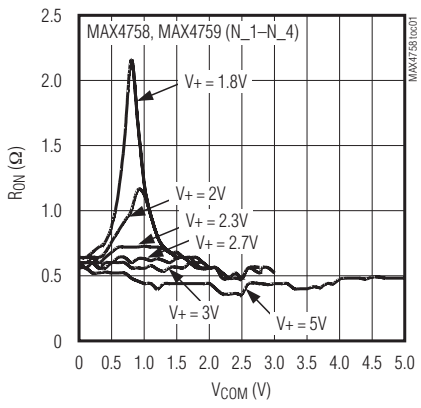
Note 8: Off-isolation = $20\log_{10}$ [$V_{COM\_}$ / ($V_{NO\_}$ or $V_{NC\_}$)], $V_{COM\_}$ = output, $V_{NO\_}$ or $V_{NC\_}$ = input to off switch.

Note 9: Between any two switches.

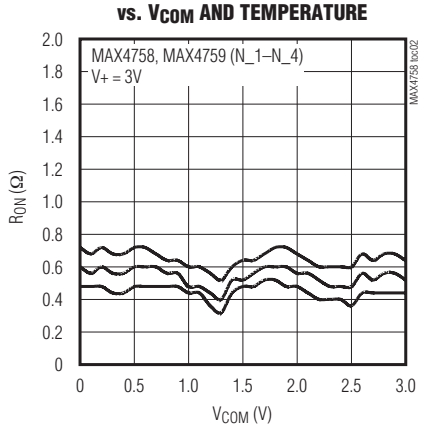
典型工作特性

(V+ = 3V, T_A = +25°C, unless otherwise noted.)

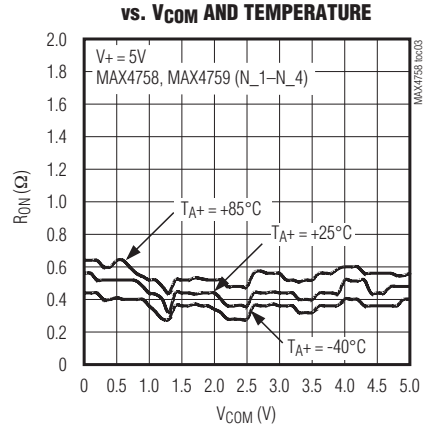
ON-RESISTANCE vs. V_{COM}



ON-RESISTANCE vs. V_{COM} AND TEMPERATURE



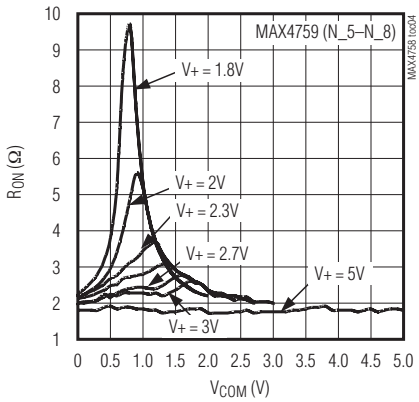
ON-RESISTANCE vs. V_{COM} AND TEMPERATURE



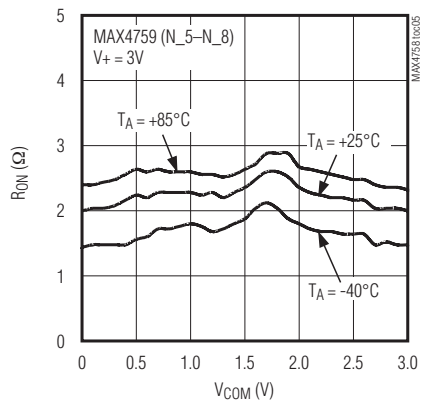
典型工作特性(续)

(V+ = 3V, T_A = +25°C, unless otherwise noted.)

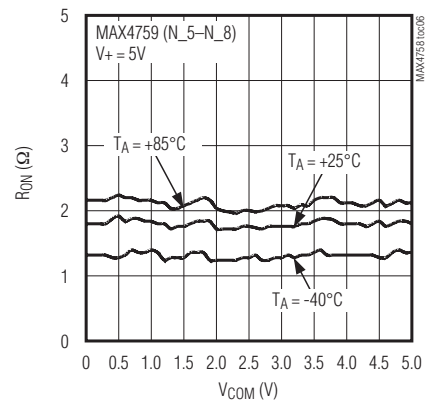
ON-RESISTANCE vs. V_{COM}



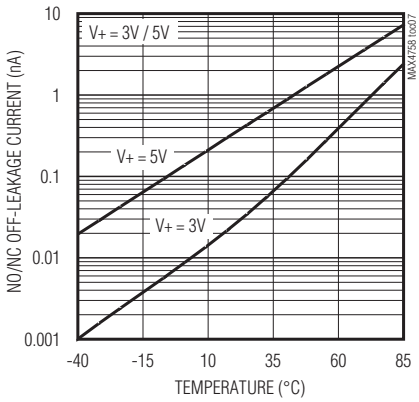
ON-RESISTANCE vs. V_{COM} AND TEMPERATURE



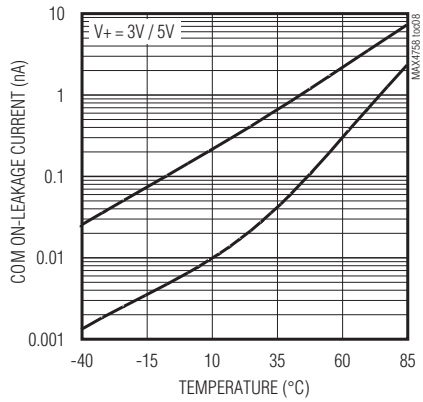
ON-RESISTANCE vs. V_{COM} AND TEMPERATURE



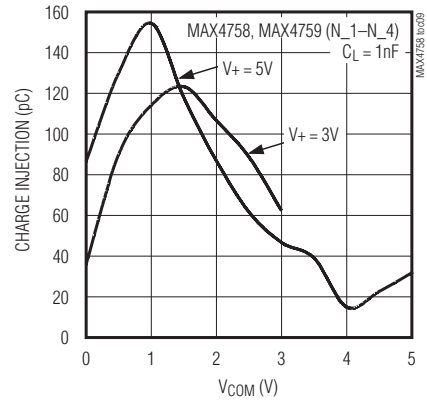
NO/NC OFF-LEAKAGE CURRENT vs. TEMPERATURE



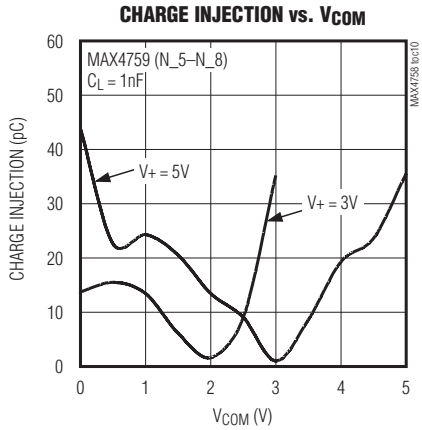
COM ON-LEAKAGE CURRENT vs. TEMPERATURE



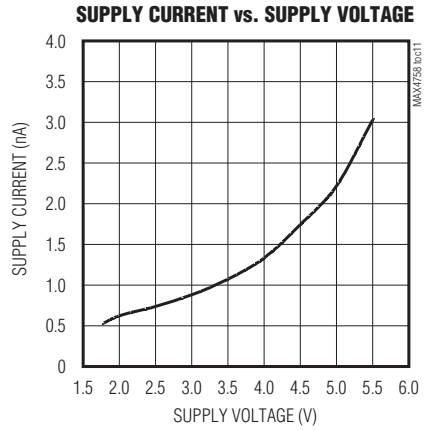
CHARGE INJECTION vs. V_{COM}



CHARGE INJECTION vs. V_{COM}



SUPPLY CURRENT vs. SUPPLY VOLTAGE

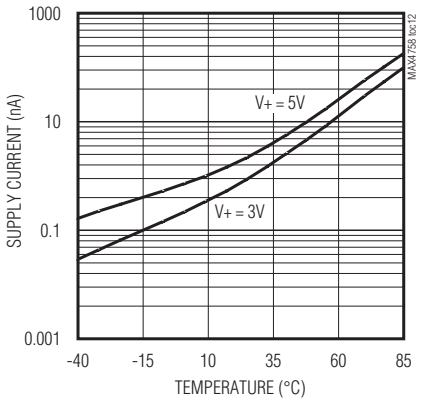


四路、DPDT音频/数据开关，UCSP/QFN封装

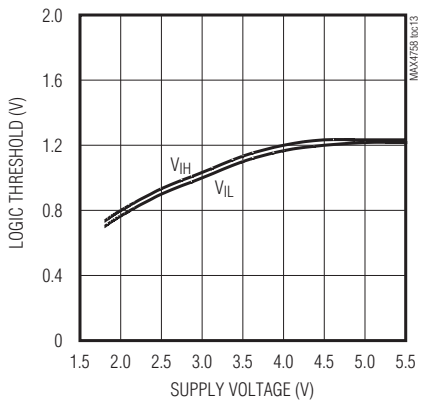
典型工作特性(续)

(V+ = 3V, T_A = +25°C, unless otherwise noted.)

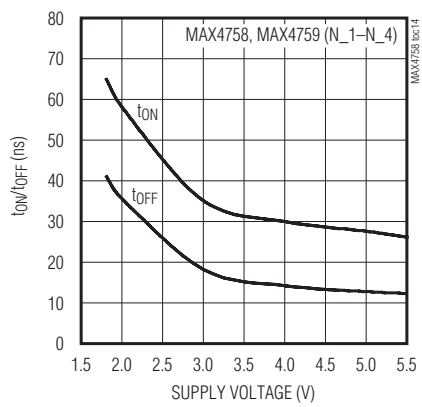
SUPPLY CURRENT vs. TEMPERATURE



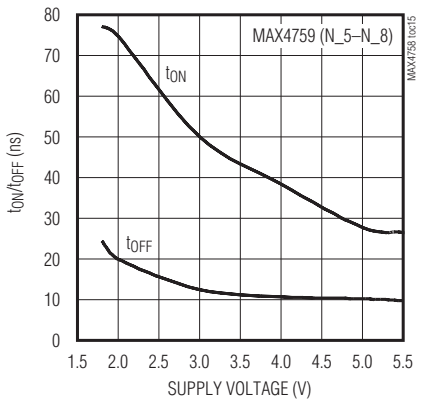
LOGIC THRESHOLD vs. SUPPLY VOLTAGE



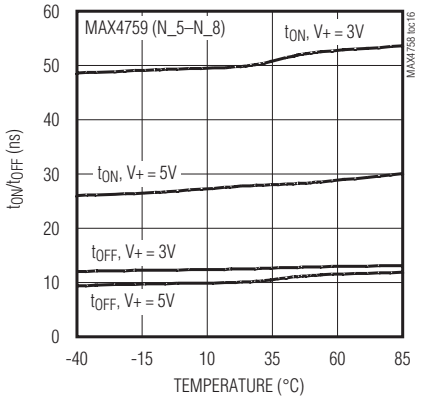
TURN-ON/OFF TIMES vs. SUPPLY VOLTAGE



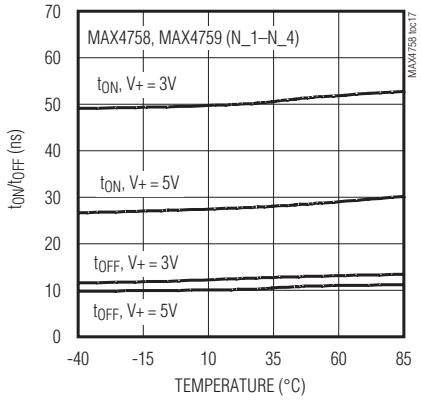
TURN-ON/OFF TIMES vs. SUPPLY VOLTAGE



TURN-ON/OFF TIMES vs. TEMPERATURE



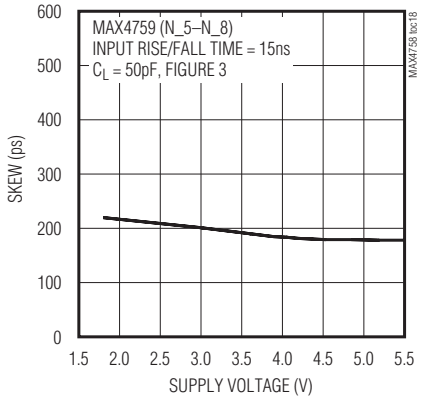
TURN-ON/OFF TIMES vs. TEMPERATURE



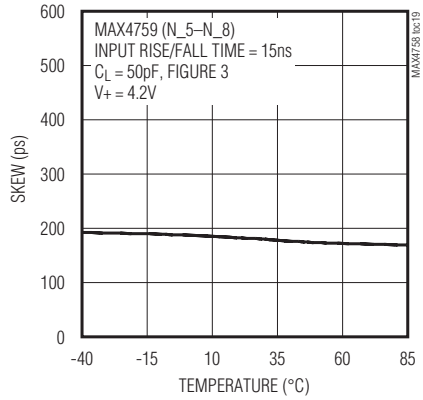
典型工作特性(续)

(V+ = 3V, T_A = +25°C, unless otherwise noted.)

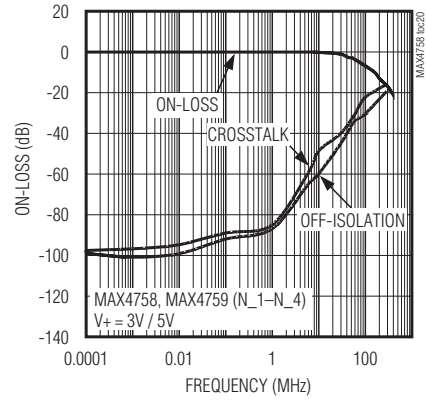
SKEW vs. SUPPLY VOLTAGE



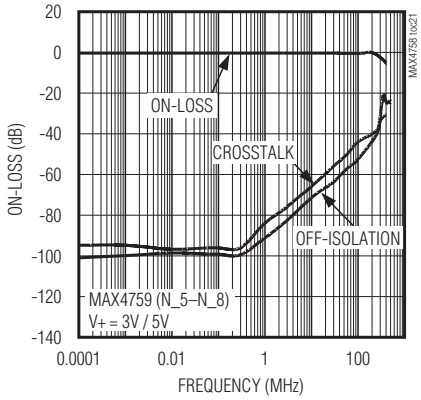
SKEW vs. TEMPERATURE



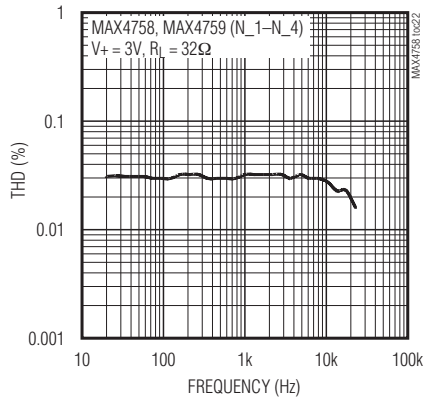
FREQUENCY RESPONSE



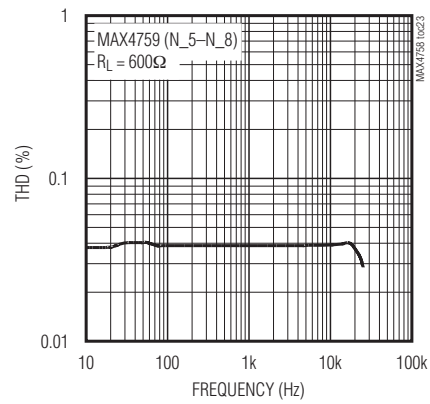
FREQUENCY RESPONSE



TOTAL HARMONIC DISTORTION vs. FREQUENCY



TOTAL HARMONIC DISTORTION vs. FREQUENCY



引脚说明

引脚				名称	功能
MAX4758		MAX4759			
薄型 QFN	UCSP	薄型 QFN	UCSP		
1	A1	1	A1	NC1	模拟开关1，常闭端1。
2	B2	2	B2	COM2	模拟开关2，公共端2。
3	A2	3	A2	NC2	模拟开关2，常闭端2。
4	A3	4	A3	INA	开关1和2的逻辑控制数字输入。
5	C3, D4	5	C3, D4	V+	正电源输入。
6	A4	6	A4	INB	开关3和4的逻辑控制数字输入。
7	A5	7	A5	NC3	模拟开关3，常闭端3。
8	B5	8	B5	COM3	模拟开关3，公共端3。
9	A6	9	A6	NC4	模拟开关4，常闭端4。
10	B6	10	B6	COM4	模拟开关4，公共端4。
11, 14, 17, 29, 32, 35	—	11, 14, 17, 29, 32, 35	—	N.C.	未连接，内部无连接。
12	C5	12	C5	NO3	模拟开关3，常开端3。
13	C6	13	C6	NO4	模拟开关4，常开端4。
15	D6	15	D6	NO8	模拟开关8，常开端8。
16	D5	16	D5	NO7	模拟开关7，常开端7。
18	E6	18	E6	COM8	模拟开关8，公共端8。
19	F6	19	F6	NC8	模拟开关8，常闭端8。
20	E5	20	E5	COM7	模拟开关7，公共端7。
21	F5	21	F5	NC7	模拟开关7，常闭端7。
22	F4	22	F4	IND	开关7和8的逻辑控制数字输入。
23	C4, D3	23	C4, D3	GND	地。
24	F3	24	F3	INC	开关5和6的逻辑控制数字输入。
25	F2	25	F2	NC6	模拟开关6，常闭端2。
26	E2	26	E2	COM6	模拟开关6，公共端6。
27	F1	27	F1	NC5	模拟开关5，常闭端5。
28	E1	28	E1	COM5	模拟开关5，公共端5。
30	D2	30	D2	NO6	模拟开关6，常开端6。
31	D1	31	D1	NO5	模拟开关5，常开端5。
33	C1	33	C1	NO1	模拟开关1，常开端1。
34	C2	34	C2	NO2	模拟开关2，常开端2。
36	B1	36	B1	COM1	模拟开关1，公共端1。
—		—		$\overline{EN}$	输出使能，低电平有效。
EP	—	EP	—	EP	裸露焊盘，与GND相连。

详细说明

MAX4758/MAX4759为四路DPDT模拟开关，采用+1.8V至+5.5V单电源供电。这些器件完全规范于+3V电源供电的应用。

MAX4758/MAX4759 (开关1–4)可保证0.5Ω导通电阻，这使其非常适合音频切换应用。MAX4759还提供另外四个单刀/双掷(SPDT)开关(开关5–8)，这些开关可保证0.2Ω导通电阻、具有25pF低电容和0.2ns偏差变化，非常适合数据或音频切换应用。这些开关有四个逻辑输入，分别用来控制成对的开关。

应用信息

数控输入

无论采用何种电源电压，MAX4758/MAX4759的逻辑输入端都可以承受最大+5.5V的电压。例如在+3.3V供电时，IN_端可以低至GND，也可以高至+5.5V，这就允许混合逻辑电平共存于同一系统中。满摆幅驱动控制逻辑输入可将功耗降至最低。在+3V电源电压下，逻辑门限值为0.5V (低)和1.4V (高)。

模拟信号电平

整个供电电压范围内(0V到V+)的模拟信号输入都可通过开关，且导通电阻变化极小(见*典型工作特性*)。开关是双向的，因此NO_、NC_和COM_既可作为输入也可作为输出。

电源旁路

电源旁路能够改善噪声容限，并能阻止开关噪声从V+电源传播到其它器件。在V+和GND之间连接一个0.1µF电容即可满足大多数应用要求。

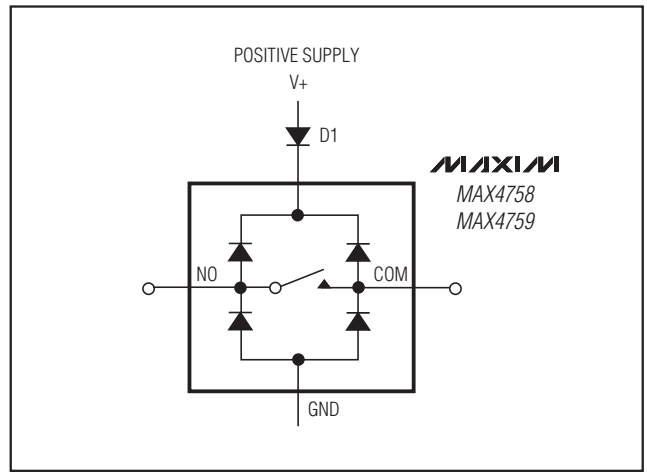


图1. 外接隔离二极管实现过压保护

供电顺序

CMOS器件需要正确的供电顺序。总是在加载模拟信号前先加V+，特别是在输入信号没有限流的情况下。如果供电顺序不能保证，而且输入信号电流无法限制在20mA以内时，则需要加一个小信号二极管(见图1)。增加了这个二极管，模拟信号范围要比V+降低一个二极管压降(0.7V)，并会略微增大导通电阻。无论何时，最大供电电压都不能超过+6V。

UCSP应用信息

关于UCSP结构、尺寸、载带信息、PCB技术、焊盘布局、推荐的回流焊温度特性，以及可靠性测试结果的最新应用数据，可从Maxim网站www.maxim-ic.com.cn/ucsp下载应用笔记：*UCSP—晶片级封装*。

时序测试电路/时序图

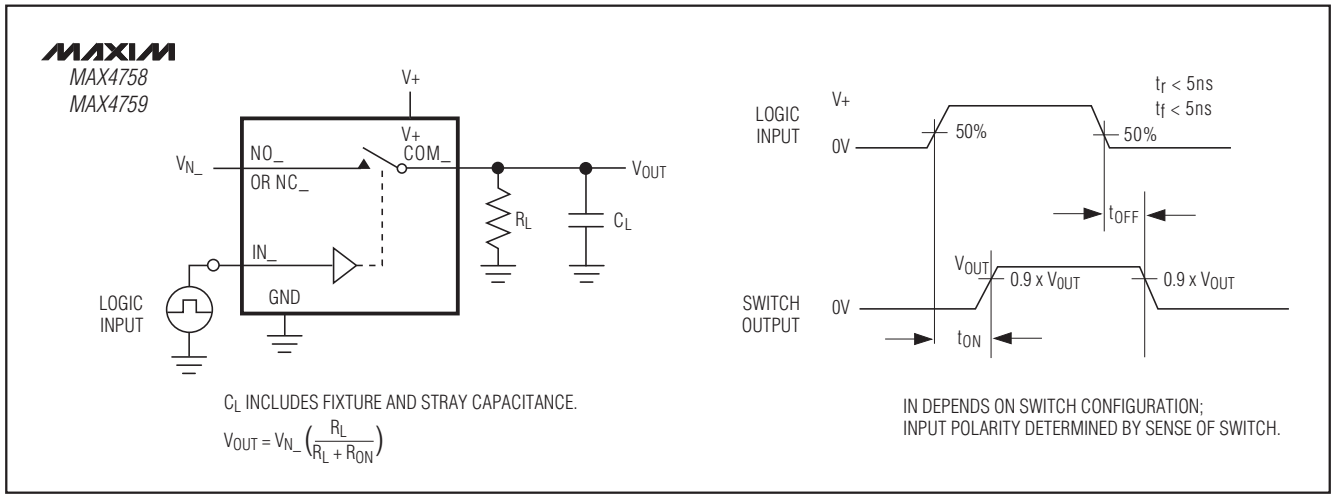


图2. 开关时间

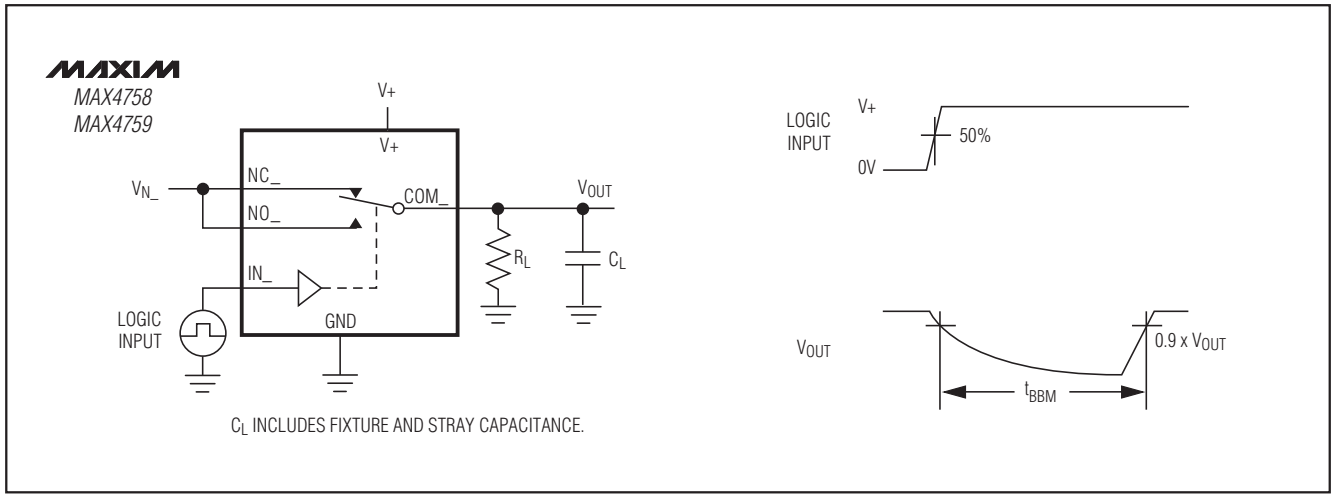
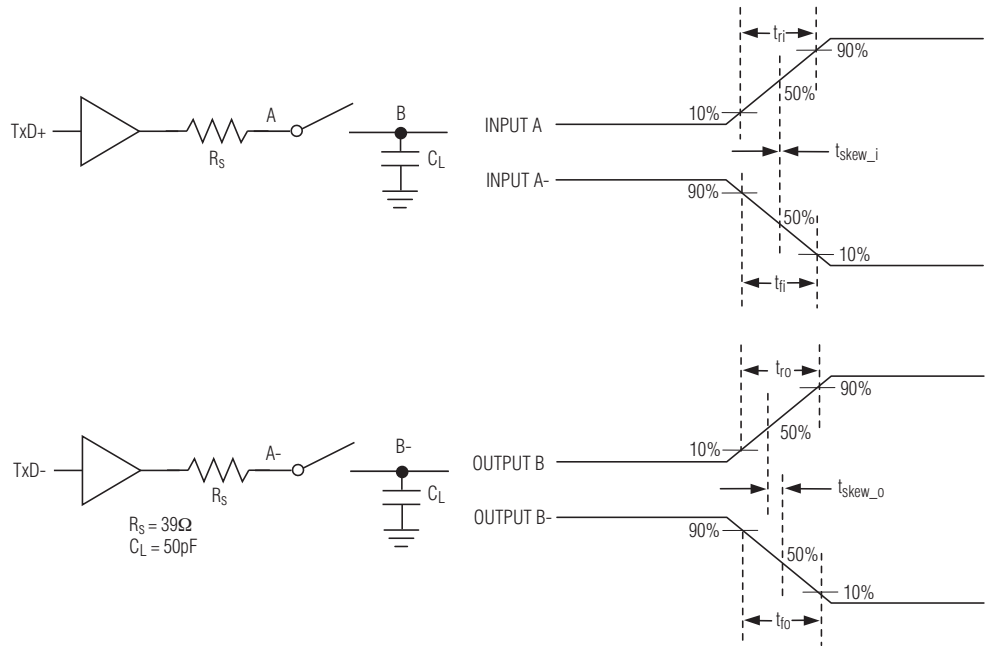


图3. 先断后合的间隔

时序测试电路/时序图(续)



$|t_{ro} - t_{ri}|$ DELAY DUE TO SWITCH FOR RISING INPUT AND RISING OUTPUT SIGNALS.

$|t_{fo} - t_{fi}|$ DELAY DUE TO SWITCH FOR FALLING INPUT AND FALLING OUTPUT SIGNALS.

$|t_{skew\_o}|$ CHANGE IN SKEW THROUGH THE SWITCH FOR OUTPUT SIGNALS.

$|t_{skew\_i}|$ CHANGE IN SKEW THROUGH THE SWITCH FOR INPUT SIGNALS.

图4. 输入/输出偏差时序图

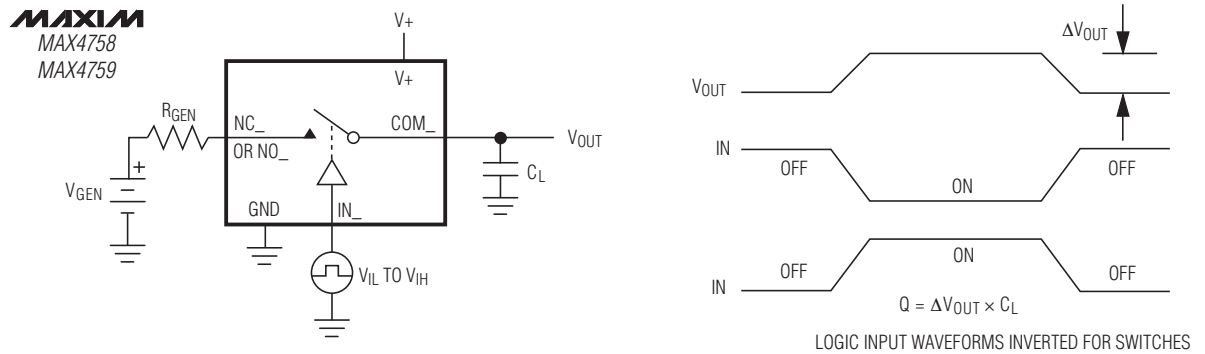


图5. 电荷注入

时序测试电路/时序图(续)

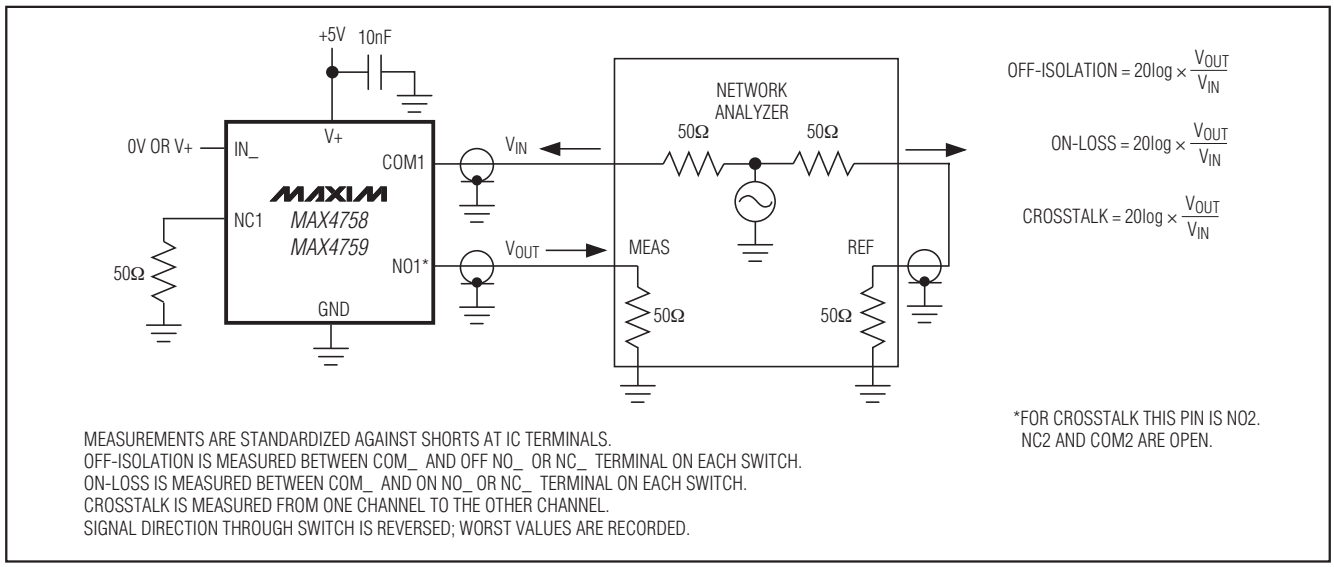


图6. 导通损耗、关断隔离和串扰

典型工作电路

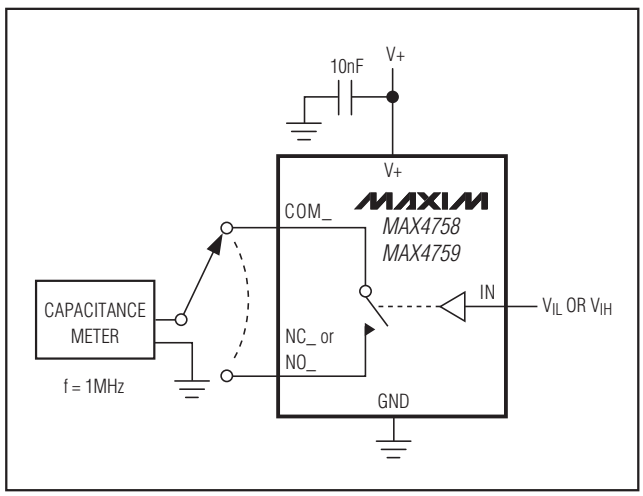
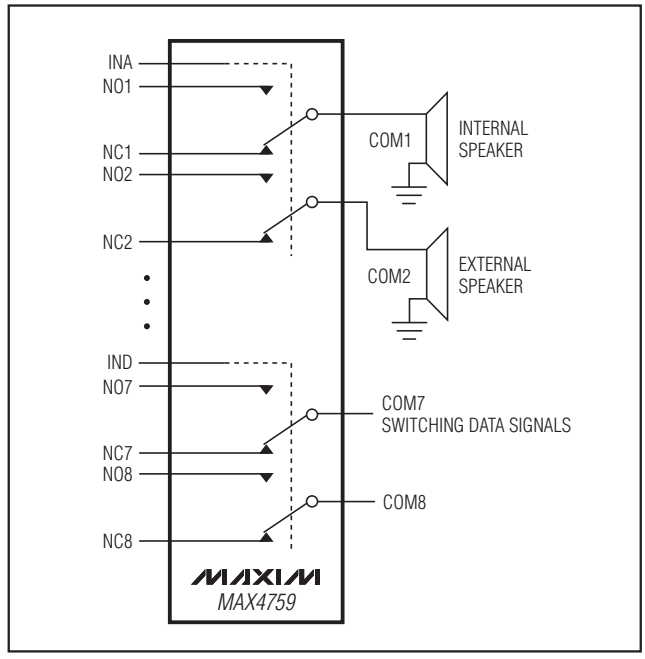


图7. 通道开/关电容



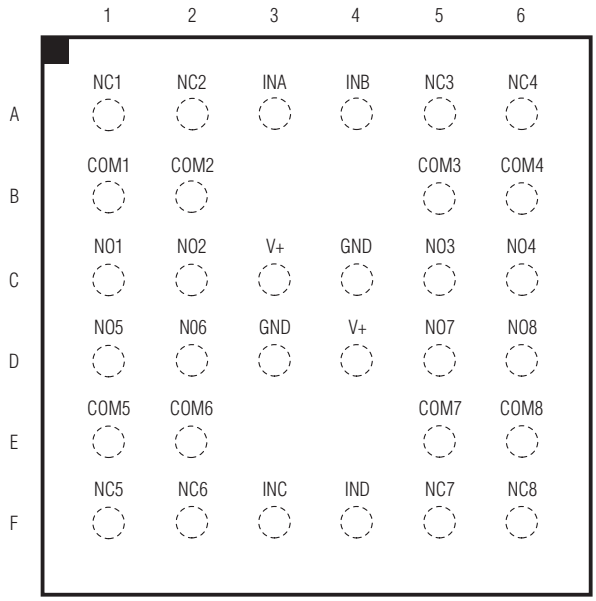
引脚配置/真值表

TOP VIEW

MAXIM

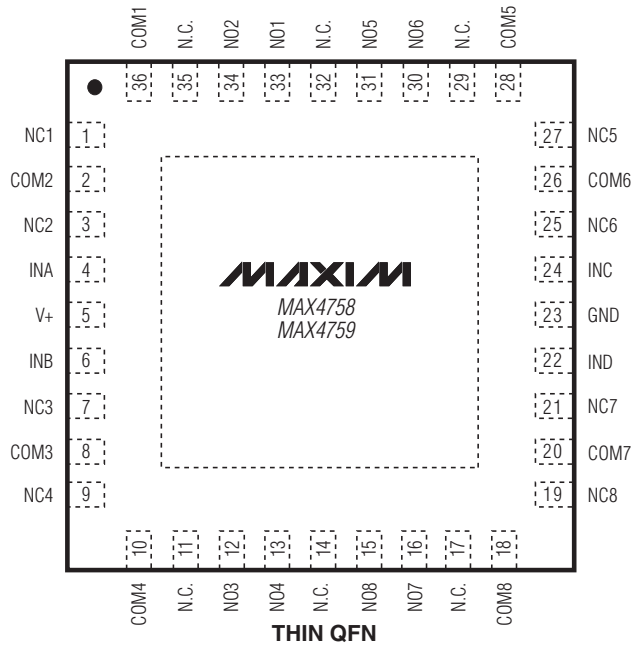
MAX4758/MAX4759

(BUMP SIDE DOWN)



UCSP
MAX4758/MAX4759

INA	NO1/NO2	NC1/NC2
LOW	OFF	ON
HIGH	ON	OFF
INB	**NO3/NO4**	**NC3/NC4**
LOW	OFF	ON
HIGH	ON	OFF
INC	**NO5/NO6**	**NC5/NC6**
LOW	OFF	ON
HIGH	ON	OFF
IND	**NO7/NO8**	**NC7/NC8**
LOW	OFF	ON
HIGH	ON	OFF



THIN QFN

NOTE: EXPOSED PADDLE CONNECTED TO GND OR FLOATING.

芯片信息

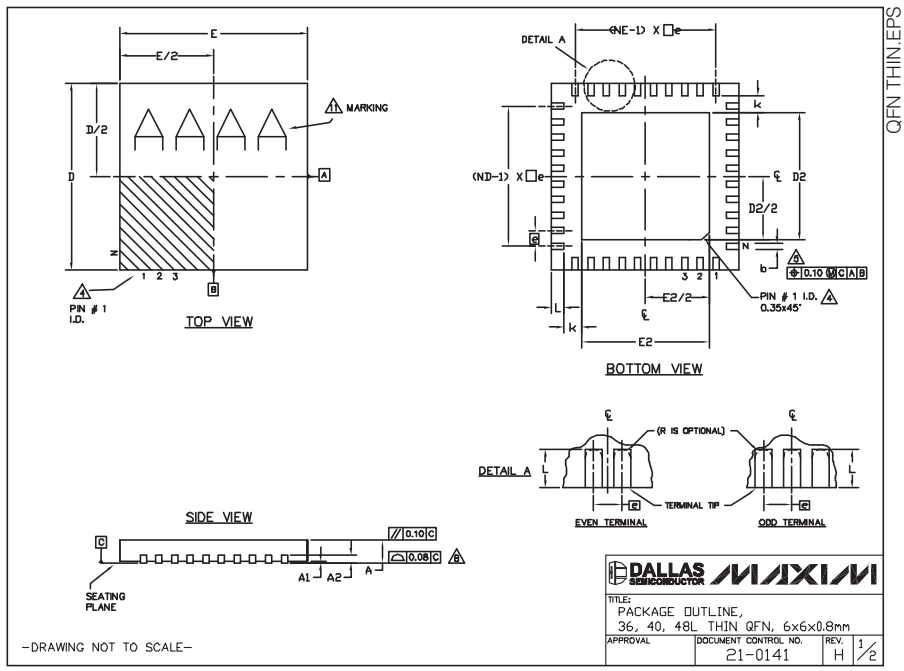
TRANSISTOR COUNT: 1432

PROCESS: CMOS

四路、DPDT音频/数据开关，UCSP/QFN封装

封装信息

(本数据资料提供的封装图可能不是最近的规格，如需最近的封装外形信息，请查询 **www.maxim-ic.com.cn/packages**。)



COMMON DIMENSIONS									
PKG.	36L 6x6			40L 6x6			48L 6x6		
SYMBOL	MIN.	NOM.	MAX.	MIN.	NOM.	MAX.	MIN.	NOM.	MAX.
A	0.70	0.75	0.80	0.70	0.75	0.80	0.70	0.75	0.80
A1	0	0.02	0.05	0	0.02	0.05	0	–	0.05
A2	0.20 REF.			0.20 REF.			0.20 REF.		
b	0.20	0.25	0.30	0.20	0.25	0.30	0.15	0.20	0.25
D	5.90	6.00	6.10	5.90	6.00	6.10	5.90	6.00	6.10
E	5.90	6.00	6.10	5.90	6.00	6.10	5.90	6.00	6.10
e	0.50 BSC.			0.50 BSC.			0.40 BSC.		
k	0.25	–	–	0.25	–	–	0.25	–	–
L	0.45	0.55	0.65	0.30	0.40	0.50	0.30	0.40	0.50
N	36			40			48		
ND	9			10			12		
NE	9			10			12		
JEDEC	WJJD-1			WJJD-2			–		

EXPOSED PAD VARIATIONS						
PKG. CODES	D2			E2		
	MIN.	NOM.	MAX.	MIN.	NOM.	MAX.
T3666-2	3.60	3.70	3.80	3.60	3.70	3.80
T3666-3	3.60	3.70	3.80	3.60	3.70	3.80
T3666N-1	3.60	3.70	3.80	3.60	3.70	3.80
T3666MN-1	3.60	3.70	3.80	3.60	3.70	3.80
T4066-2	4.00	4.10	4.20	4.00	4.10	4.20
T4066-3	4.00	4.10	4.20	4.00	4.10	4.20
T4066-4	4.00	4.10	4.20	4.00	4.10	4.20
T4066-5	4.00	4.10	4.20	4.00	4.10	4.20
T4866-1	4.40	4.50	4.60	4.40	4.50	4.60
T4866-2	4.40	4.50	4.60	4.40	4.50	4.60

NOTES:
1. DIMENSIONING & TOLERANCING CONFORM TO ASME Y14.5M-1994.
2. ALL DIMENSIONS ARE IN MILLIMETERS. ANGLES ARE IN DEGREES.
3. N IS THE TOTAL NUMBER OF TERMINALS.
4. THE TERMINAL #1 IDENTIFIER AND TERMINAL NUMBERING CONVENTION SHALL CONFORM TO JESD 95-1 SPP-012. DETAILS OF TERMINAL #1 IDENTIFIER ARE OPTIONAL, BUT MUST BE LOCATED WITHIN THE ZONE INDICATED. THE TERMINAL #1 IDENTIFIER MAY BE EITHER A MOLD OR MARKED FEATURE.
5. DIMENSION b APPLIES TO METALLIZED TERMINAL AND IS MEASURED BETWEEN 0.25 mm AND 0.30 mm FROM TERMINAL TIP.
6. ND AND NE REFER TO THE NUMBER OF TERMINALS ON EACH D AND E SIDE RESPECTIVELY.
7. DEPOPULATION IS POSSIBLE IN A SYMMETRICAL FASHION.
8. COPLANARITY APPLIES TO THE EXPOSED HEAT SINK SLUG AS WELL AS THE TERMINALS.
9. DRAWING CONFORMS TO JEDEC MO220, EXCEPT FOR 0.4mm LEAD PITCH PACKAGE T4866-1.
10. WARPAGE SHALL NOT EXCEED 0.10 mm.
11. MARKING IS FOR PACKAGE ORIENTATION REFERENCE ONLY.
12. NUMBER OF LEADS SHOWN FOR REFERENCE ONLY.

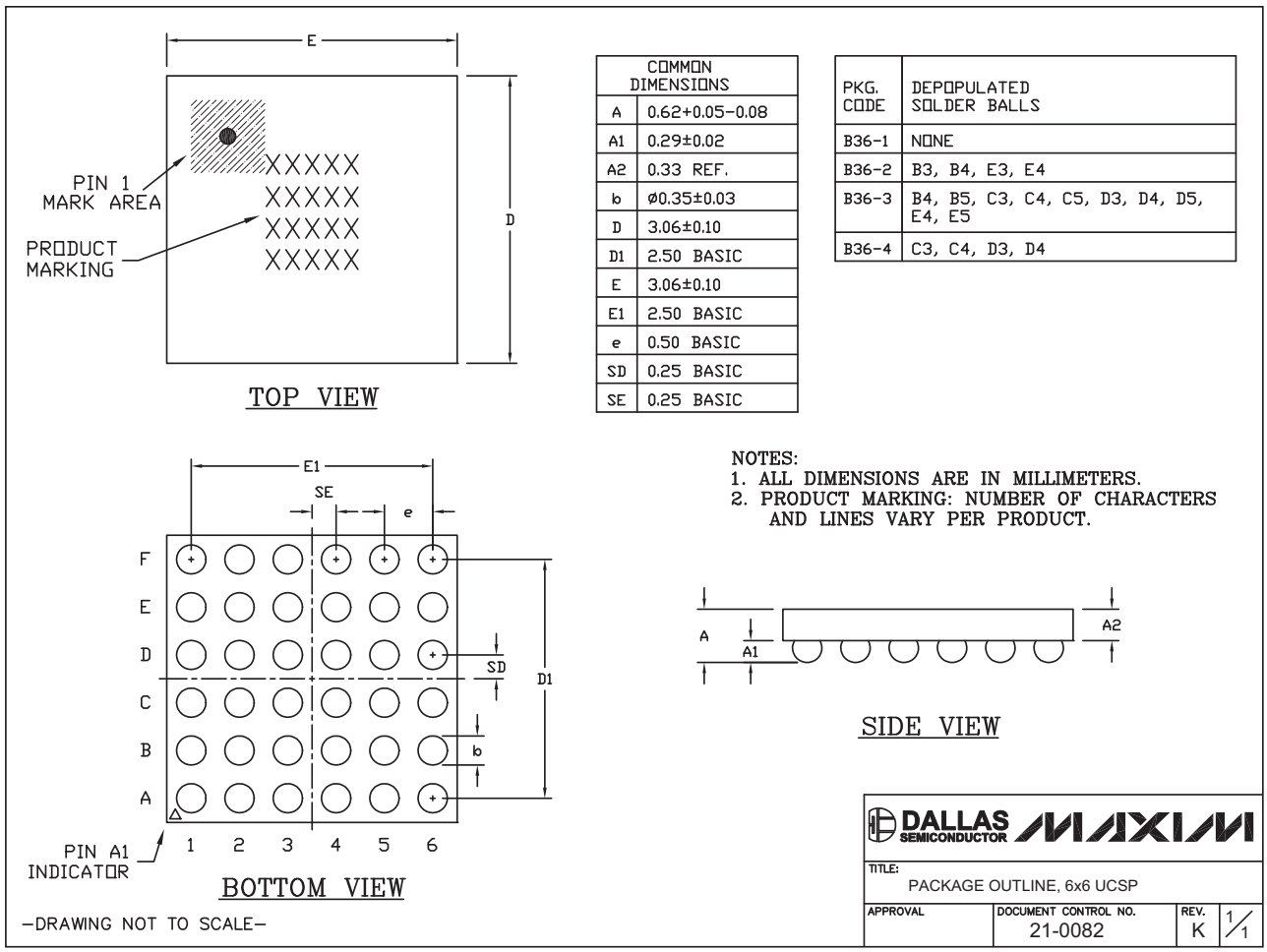
-DRAWING NOT TO SCALE-

DALLAS SEMICONDUCTOR MAXIM
TITLE: PACKAGE OUTLINE, 36, 40, 48L THIN QFN, 6x6x0.8mm
APPROVAL
DOCUMENT CONTROL NO. 21-0141
REV. H
2/2

封装信息(续)

(本数据资料提供的封装图可能不是最近的规格，如需最近的封装外形信息，请查询 **www.maxim-ic.com.cn/packages**。)

36L,UCSP.EPS



COMMON DIMENSIONS	
A	0.62+0.05-0.08
A1	0.29±0.02
A2	0.33 REF.
b	ø0.35±0.03
D	3.06±0.10
D1	2.50 BASIC
E	3.06±0.10
E1	2.50 BASIC
e	0.50 BASIC
SD	0.25 BASIC
SE	0.25 BASIC

PKG. CODE	DEPOPULATED SOLDER BALLS
B36-1	NONE
B36-2	B3, B4, E3, E4
B36-3	B4, B5, C3, C4, C5, D3, D4, D5, E4, E5
B36-4	C3, C4, D3, D4

修订历史

Rev 2中的修改页：1、3、4、9、15。

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